

FIRST PEOPLES IN A NEW WORLD

Second Edition

Sometime before 15,000 years ago, a band of hunter-gatherers arrived in Northeast Asia. They continued east, becoming the first people to set foot in the Americas. They soon found themselves in a world rich in plants and animals that became more exotic as they moved south, but also a world still shivering itself out of the coldest depth of the Ice Age. The movement of those first Americans was one of the greatest journeys undertaken by ancient peoples in the distant past. In this book, David J. Meltzer explores the world of Ice Age Americans, highlighting genetic, archaeological, and geological evidence that has revolutionized our understanding of their origins, antiquity, and adaptation to what was then a truly new world. In this revised edition, the author integrates the most recent scientific discoveries, including the ancient genome revolution and human evolutionary and population history, into his account of Ice Age America. Aimed at and written for a broad audience, the book can also serve as a text in courses on North American archaeology, Ice Age environments and human evolution and prehistory.

David J. Meltzer is the Henderson-Morrison Professor of Prehistory, and the Executive Director of the Quest Archaeological Research Program at Southern Methodist University. He has conducted archaeological research throughout North America, and is the author of over ten books and some 200 scientific articles. He is a fellow of the United States National Academy of Sciences and the American Academy of Arts and Sciences.

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Populating Ice Age America

Second Edition

David J. Meltzer

Southern Methodist University, Texas



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To my grandchildren,
Evelyn, William, and Clara.

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PREFACE TO THE FIRST EDITION

An *Albuquerque Journal* reporter was on the phone: “Have you heard of the recent discoveries at Pendejo Cave here in New Mexico?” he asked and then added, laughing, “Do you know what ‘Pendejo’ means in Spanish? Our readers sure do!” I had heard. I did know. And what I said next, foolishly in retrospect, nearly got me pummeled one night in a hotel bar in Brazil by Scotty MacNeish: excavator of Pendejo Cave, grand old man of archaeology – and former Golden Gloves boxing champion.

The fight was about a discovery as profound – or trivial – as fingerprints. Not just any fingerprints: MacNeish came out of Pendejo Cave and announced he’d found *human* fingerprints that were upwards of 37,000 years old, instantly tripling the then-oldest accepted antiquity for the arrival of humans in the Americas (the Clovis archaeological presence, dated to ~11,500 radiocarbon years ago). When the reporter asked what I thought of MacNeish’s claim, I replied, “You’re not going to convince me until you’ve fingerprinted the crew.”

Granted, it was a flip response. But I thought the point reasonable. To persuade an extremely skeptical archaeological community to accept this unparalleled discovery, MacNeish would have to demonstrate those fingerprints were just as old as advertised, and not odd clay globs his excavators had inadvertently imprinted and later mistook for archaeological specimens. Extraordinary claims require extraordinary proof. I thought I was being helpful. MacNeish thought otherwise. It surely didn’t help that my response led to his Pendejo Cave claim being named one of that year’s *Albuquerque Journal* “Cowchip Award” winners. (I don’t think I need to explain why the Cowchip is not a coveted award.)

When we bumped into each other in that bar a year later – ironically, we’d both been invited to Brazil to examine Pedra Furada, another purportedly ancient site (see Chapter 4) – MacNeish swore furiously at me for accusing his crew of faking evidence. Faking evidence!? Only after fifteen minutes of very fast talking, spent just beyond the distance I guessed he could still throw a punch at age 75, was I able to convince him that wasn’t my point at all. I am not sure he ever believed me. I know he never forgave me. But he did send me a reprint of the article he published on the Pendejo Cave fingerprints, and even autographed it: “Finally got it published,” he scrawled across the top, “in spite of you.”

Fair enough.

I framed the reprint, and it’s prominently displayed in my office: perfect witness to the heat that’s generated in the search for the America’s first peoples.

Not that this is anything new. Questions about the origins, antiquity, and adaptations of the first peoples, while easily asked, have proven extraordinarily difficult to answer, and have been contentious since first posed in modern form in the 1860s. Those questions are still the focus of research today, albeit using vastly different theoretical, analytical, and archaeological tools, involving a far wider range of contributing disciplines, and producing a stream of publications that in the last several decades has become a raging academic torrent. The intervening century and a half has witnessed multiple site discoveries, conceptual breakthroughs, pivotal moments that have propelled and guided research, and cycles of bitter controversy and grudging, short-lived periods of peace. We’ve learned a great deal.

Still, in just the last dozen years much of what we knew – or thought we knew – about the peopling of the Americas has been turned on its head by new discoveries, new analyses, and new controversies, all of which cut across multiple disciplinary lines. The biggest difference? Before we spoke of the possibility of a pre-Clovis presence in the New World in hypothetical terms; now it is a reality, and it’s a whole new archaeological world as a result. In the scramble to right ourselves many ideas – some controversial, others outlandish – are being tried on for size. It’s the natural course of affairs in scientific change, and no cause for alarm. Yet.

So much has changed that my previous book on the topic, *Search for the First Americans* published in 1993, is now woefully out of date. (More embarrassing: used copies are now selling for \$1.00 on the web and the press that published it has folded; these two facts, I choose to believe, are unrelated.) At the time I wrote *Search for the First Americans*, geneticists were only just beginning to peer into corners of the human genome to use DNA to trace our collective ancestry; the excavation and analysis of the Monte Verde site in Chile – then one of several candidates for great antiquity in the New World, and not the first among all – was just being wrapped up; Pleistocene geologists had only glimpsed the complexity of the causes and climatic and ecological consequences of the Ice Age (Pleistocene), especially the frenetic changes at its end, just as the first Americans were radiating out across the continent; and, the now-infamous Kennewick skeleton still

lay buried in the banks of the Columbia River, yet to make its *60 Minutes* debut with Leslie Stahl or become the centerpiece of a costly lawsuit that exposed deep rifts within the archaeological community, and especially between those who study the past and those – Native Americans – who are its living descendants. These and a gaggle of other developments have wrought a sea change in our approach and understanding of the first Americans. It's time for a fresh look.

This book was originally intended as a second edition of *Search for the First Americans*, but my attempt to gently insert new material, delete stale parts, and patch up original but still-serviceable bits proved impossible, and I soon gave up the effort. I had underestimated just how much had changed – including my thinking on many of these matters. So I instead tore down each of the original chapters to their foundation timbers, discarded unwanted parts (and even one unwanted chapter), added several new chapters, and then rebuilt the whole from the ground up to reflect all the changes in evidence, emphasis, and thinking. The basic framework remains, and some of the load-bearing elements of a chapter, if judged sufficiently robust, were allowed to stay, along with stories that were just too good not to retell. Much of the new material is based on articles I've published in recent years in a variety of scholarly journals and books, so it has been through the wringer of peer review from colleagues and – perhaps a more stringent test – had to pass muster with my students, undergraduate and graduate alike. The result is the book before you: more than twice as long, far wider in range, and more detailed in coverage than *Search for the First Americans*, and because it supersedes and replaces the earlier volume, deserving of a new title: *First Peoples in a New World: Colonizing Ice Age America*.

WHAT THIS VOLUME IS ...

First Peoples in a New World is my effort to explain the twists and turns of the search for the first Americans, the controversy that has long enveloped it, and what we've learned of who they were, when and from where they came, and how they colonized what was then, truly, a New World. Although I am an archaeologist, I am by nature eclectic in my approach to scientific problems, and have spent a fair amount of time crossing disciplinary lines looking for help from geneticists, geologists, linguists, and physical anthropologists in answering stubborn archaeological questions. And there are few questions more stubborn or that lend themselves so readily to an interdisciplinary solution as the peopling of the Americas. *First Peoples in a New World* is thus not just a synthesis of the intellectual history and current state of the archaeological understanding of the peopling of the Americas, it's also a close look at the evidence being brought to bear by non-archaeologists to this problem – and an effort to see whether we can all get along.

In fact, this book centers around two interlocking themes. The first is *what we know* of the first Americans – about who they were, where they came from, when we think they arrived, how many early migratory pulses there may have been, and the route(s) by

which they came to the Americas. It's also about the climatic and ecological conditions of the Ice Age terrain they traveled and the diverse landscapes they encountered; about their adaptive responses to the challenges of colonizing an uninhabited and unfamiliar world; about the speed with which these pedestrian hunter-gatherers moved across their new world; about their effect on the native animals of the Americas – and whether they had a hand in the extinction of some three dozen genera of Pleistocene mammals. Finally, it is about the evolutionary processes and pathways they blazed, and the long-term consequences of their prehistory.

The other theme is about how we know what we know about the first Americans. It is about the methods archaeologists, geologists, linguists, physical anthropologists, and geneticists are bringing to bear on the problem of origins, antiquity, and adaptations (my non-archaeological colleagues will, I hope, forgive my trespassing). Because these approaches yield very different kinds of evidence, they are not easily reconciled, nor do the practitioners in each field sing in harmony. Hence, it is important to understand how they (we) arrive at our conclusions, and just how reliable those conclusions might be.

Admittedly, talking about how we know what we know is not nearly as satisfying as talking about what we know, but it's vital all the same, especially in light of how this topic is often portrayed in the popular media. Our contentiousness encourages journalists, science writers, and film-makers to pitch a story of the peopling of the Americas around colorful characters, raging controversy, and outrageous theories – we don't lack for any of these – especially if it involves that hackneyed theme of an iconoclastic scholar fighting the establishment to prove the revolutionary idea that [fill in the blank] proves everything science has ever thought was wrong. The headlines fairly leap from page and screen: “American Indians were not the first ones here!” “Siberian hunter claims extinct Ice Age bears still alive!” And, for conspiracy buffs, “The suppressed story of the people who discovered the New World.” One doesn't have to make these up: the last is the subtitle of a just-released book.

Those of us in the business are not without sin. We feed the beast, holding press conferences to announce the discovery of the (latest) oldest site in the Americas, make claims on camera that would never pass muster in the professional journals, or give flip comments to reporters about our colleagues' discoveries (like, say, “Fingerprint the crew”) that stoke the fires of controversy. Indeed, as I was writing this book a group of geologists and archaeologists launched a press campaign proclaiming that a comet blasted the earth in the late Pleistocene, an unwelcome ET that wreaked havoc on global climates, destroyed North America's megafauna, and devastated Paleoindian populations. They might be right, but it's customary in science to build the case and publish the evidence *before* issuing the press release about the conclusions.

However entertaining the often-gossipy popular accounts of this controversy – especially when it's not your ox being gored – they rarely provide accurate or complete details of the science behind it all, or its results. Having long been a participant in the pre-Clovis controversy, and particularly its tipping point at Monte Verde, I can easily see

that commentary on it by individuals who view it from the outside bears only a passing resemblance to what I saw actually happening. In fact, not only do these err on what happened publicly, they naturally miss much of what went on behind the scenes, and those who put dialogue in our mouths to recreate events are usually completely wrong.

Moreover, there is the inescapable fact that beneath all the tabloid talk there are legitimate scientific and substantive reasons why we disagree about issues, why the same archaeological (or linguistic, or genetic, or skeletal) evidence can and often is viewed very differently by different investigators, and why there is ambiguity and disputed interpretation. Challenging though it may be at times, to truly understand the peopling of the Americas requires probing deeply into how this knowledge is created, shaped, and put to use. Only with that understanding is it possible to appreciate why, despite evidence converging from so many diverse fields, questions about the first Americans are among the most contentious in anthropology, and may remain so.

Finally, and though it may go without saying, I confess I am not without sin. My voice has long contributed to the din over the origins and antiquity and adaptations of the first Americans, and I have been directly involved in disputes over key pre-Clovis sites, in contesting the claim the Americas were colonized from Ice Age Europe, in debating the role of Paleoindians in the extinction of the Pleistocene megafauna, and in seeking to understand how hunter-gatherers met the challenges of moving across and adapting to the vast, unknown, diverse, and changing landscapes of Pleistocene North America.

I have had my own ox gored.

I will nonetheless do my best to present the different sides of a disputed issue, but the reader is forewarned. *Caveat lector.*

... AND WHAT THIS VOLUME IS NOT

This book is not about the Ice Age peopling or Paleoindian archaeology of all of the Americas: it's mostly about North America. This is so for several reasons, not least that Pleistocene glaciation, climates, and environments play out in very different ways in the northern and southern hemispheres, and so too the archaeological records are dissimilar. Even using the term pre-Clovis in South America is a misnomer since Clovis fluted points, strictly-speaking, only reach as far south as Panama. Covering the entire hemisphere would double the size of an already large book, and is unnecessary in any case, as there are several volumes that ably cover the South American ground, leaving me free to concentrate on North America, which is the region of my own archaeological field research and expertise.

That said, the South American record is not ignored. I examine hemisphere-wide evidence from language, teeth, genes, and crania relevant to questions of the peopling of North America, as well as the South American sites that figure prominently in the pre-Clovis debate. The latter are archaeologically relevant since the ancestors of the first

South Americans must have come via North America; we haven't a shred of evidence to indicate South America was peopled directly by ocean-crossing. If the oldest accepted sites are in the southern hemisphere – as is the case at the moment – then there must be ones older still in the northern hemisphere. Only, we've not found them yet – or at least not agreed we've found them.

I wrote this book for the general reader and not my archaeological colleagues, who've perhaps heard quite enough from me on this subject already. The difference is largely a matter of style rather than substance, but also of coverage. The constraints of space and the demands of the narrative forbade me from mentioning every important site, researcher, argument, or claim (sometimes, I confess, I was glad of it). Accordingly, rather than provide encyclopedic site-by-site lists of what was found where – the sort of thing only an archaeologist could love – I instead highlight finds that help illustrate broad archaeological patterns and adaptive processes. I provide details as needed, but there's too good a story to be told here to become bogged down in archaeological minutiae. To further ease the narrative for my intended readers, I have gone against all my scholarly instincts and omitted citations from the text. But I cannot fully shed my obligation to give credit (or blame) for ideas and discoveries. Thus, I have embedded throughout the book endnotes that provide citations to source material, along with occasional follow up comments.¹

Many voices will be heard here, save for an obvious one: those of the *descendants* of the first peoples, Native Americans. I do not omit discussion of their traditional origin narratives out of either disinterest or disdain, or because I think they are unrelated to the first peoples in America. I don't. Rather, it is because my expertise lies elsewhere. Even so, I am acutely aware that questions of the Pleistocene peopling of the Americas bear on contemporary issues of Native American identity and ancestry, and of “ownership” of the past and present (Chapter 10). It's not a rhetorical question to ask, as Vine Deloria has, if Indians had “barely unpacked before Columbus came knocking on the door,” will people doubt Indian claims to the land and its resources? And I am sympathetic to the anger provoked among native groups by speculations by some archaeologists and physical anthropologists that the Americas were originally peopled from Europe, or not by ancestral Native Americans. Such claims cannot be made lightly nor without unimpeachable evidence though, as will be seen, they have been.

I also recognize that Native American views of their origins are not always consonant with those of archaeology. In some cases – as, for example, Deloria's piercing *Red Earth, White Lies* – they furiously condemn it. There are archaeologists who agree: we need to downplay “solid archaeological dogma such as the Bering Land Bridge migration route

¹ Like this. Some notes will be little more than names, dates, and page numbers. Others will elaborate on matters in the text. All can be ignored without penalty, if one is so inclined.

to the Americas,” they say. Here’s my view: the past is large enough to accommodate many different uses (as Robert McGhee put it) and I am content to co-exist.²

But more important, I won’t be shy about casting a critical scientific eye on what archaeologists and anthropologists know and don’t know about the peopling of the Americas. After all, it’s only dogma if it’s left unexamined. That won’t happen here.

Finally, a comment on my use of the term *new world*. It was, of course, applied by Europeans to the Americas.³ At the tail end of the 15th century the American continent was new. To them. It was hardly new to the American Indians who were here to greet them, for they were the descendants of peoples who had been living here for millennia. Yet, to speak of the Ice Age colonization of the new world is unquestionably appropriate in this context, for when the first people reached America more than 15,000 years ago, this truly was a new world. In fact, as we shall see, Ice Age America was new in more ways than just a world uninhabited.

² Deloria, quoted in Thomas 2006: 222. Zimmerman (1997: 53) considers our suppositions about the Bering Land Bridge to be dogma. McGhee 2004.

³ The term “New World” appears to have been coined by Peter Martyr, an Italian scholar attached to the court of Ferdinand and Isabella, probably in late 1494, which he subsequently used in the title to his collected letters and essays about Columbus’ voyages, *De orbe novo: The Eight Decades of Peter Martyr D’Anghé*, first published in 1516.

PREFACE TO THE SECOND EDITION

It's been a decade since the publication of the first edition of *First Peoples in a New World*. Readers and reviewers alike have been kind to the book (thanks!); indeed, one of the reviewers (archaeologist David Anderson), anticipating an increase in knowledge on the subject, even hoped I'd write "an update in about 15 years or so."

Just over a decade has passed, but here we are. The reason for launching the update now? In the time since the first edition there's been a raft of new discoveries, some old controversies have been resolved, and there's been an upsurge in research across the disciplinary board – so much so in archaeology that a new journal dedicated to the topic was created just to accommodate the outpouring of publications. Although such developments by themselves warrant updating *First Peoples in a New World*, what accelerated the need for a second edition – and has rendered significant portions of the first edition badly out of date – is a revolutionary scientific advance that has opened an entirely new dimension in our understanding of the peopling of the Americas.

For the last century and a half, archaeology has been our principal source of evidence for the origins and antiquity of the first Americans. There are a great many things we have learned from their sites, artifacts, and features about, say, when they arrived, how they adapted to their new homeland, the plant and animal resources they exploited, the distances they traveled across the landscape, their impacts on the environment and their responses to changing climates, and how their cultures evolved over the centuries and millennia. But the one thing archaeology has never been good at is population history.

For we also want to trace the first Americans back in time to identify their distant kin, and forward to their present-day descendants. We want to know how many groups

might have come from Northeast Asia to the Americas in Pleistocene times, and whether the distinctions we see in the archaeological evidence reflect different peoples or cultural differences. We seek to understand whether there was admixture between early groups; how population size may have changed over time (and when and why); and whether there has been population continuity (or not) over the centuries and millennia since their arrival, and how that played out in different regions and relate to changing climates and environments.

Yet none of those issues are readily resolved with archaeological evidence, for all that customarily provides are scattered stone and bone “snapshots” from widely scattered sites at different moments in the past. We can look at those snapshots and claim based on, say, the similarity of artifacts, that ones found at a 14,000 year old site were made by the ancestors of a group who lived in that region 2,000 years later, or that these were the ancestors of the peoples who lived there when Europeans arrived in the 15th century. Yet more than likely we would be wrong; certainly we had no way of knowing if we were right.

Now we do.

Thanks to revolutionary advances in molecular biology and genetics it is possible to obtain ancient DNA, more specifically ancient genomic sequences (there’ll be lots more on this in Chapters 5 and 6), which can detail to an extraordinary degree the nuances of population history. We can now bridge the divide between past and present, and between the archaeological record and the peoples who created it.

This was a development I could see on the horizon when I was writing the first edition. As I said there, “the recovery of ancient DNA has the potential to revolutionize our understanding of population history.” (I had in mind ancient autosomal DNA: there had already been some success recovering ancient mitochondrial DNA, but there the technical hurdles were much lower, and likewise the payoff with this single-locus marker.) I was hardly going out on a limb in predicting as much, for I knew of ongoing work in that realm, and suspected it was only a matter of time before the technical and analytical challenges to recovering and analyzing ancient genomes would be overcome. They were, and very soon after *First Peoples in a New World* was published in 2009.

The first ancient genomes were sequenced in 2010, and the first Native American ancient genome in 2014. These were followed in rapid succession by the analysis of many more ancient and modern genomes. Together these have fundamentally changed our understanding of and, indeed, our approach to the peopling of the Americas. It’s not that everything we used to think was wrong, though the genetic results have shined an unforgiving spotlight on some of the dubious claims of ancestry and descent that were based on cranial anatomy. Rather, it’s that we are learning things we never knew, and in some instances could not have imagined knowing, at least not with archaeological or the other traditional types of evidence.

A decade from now, ancient DNA results will be more commonplace. But the last ten years have been something of a golden era in which every ancient individual whose

genome was sequenced was a revelation about the population history of the Americas, the peopling process, and has helped to solve some longstanding and occasionally bitter controversies.

The advent of ancient DNA to Native American population history is unquestionably the most game-changing advance of the last decade. Yet it's not the only one. We have gained new insights into human evolutionary history, which more fully situates the peopling of the Americas within the broader context of the dispersal of modern humans out of Africa, and provides insight into the deep and detailed tapestry of Native American ancestry, including the genetic threads that link them (and many of us too, for that matter) to our long-vanished distant Neanderthal and Denisovan cousins. We have learned a great deal about the stage on which the peopling process took place – the route(s) possibly taken (or not) by the first peoples, and the landscape, climate, and environment that greeted them on their arrival and dispersal.

There are also many “new” old archaeological sites. Monte Verde is no longer the one-off it long appeared to be, though there remains as much contentiousness as ever regarding which of the new old sites provides acceptable evidence of when the first people arrived. There is still to-ing and fro-ing in this and the other debates that enliven research in this realm: over the possible role of humans in the widespread slaughter of the Pleistocene megafauna; the claim a giant space rock clobbered the earth ending the Clovis way of life; whether the first Americans came from Europe; how (and if) the Pleistocene-ending Younger Dryas cooling impacted human populations; and, broadly, just who the first Americans were, where they came from, how many migratory pulses there'd been to the Americas, and once they arrived how they impacted or were in turn impacted by their new world.

Those are just some of the major areas that warranted updating and revising, and there were many more minor ones as well. Unlike the transition from my *Search for the First Americans* (in 1993) to *First Peoples in a New World* (in 2009) in which the slate was largely wiped clean, the book before you is a true second edition. The structure remains the same, and more of the content survives from the first edition, though over half of the material is new. There is even new content in Chapter 3, which covers the 19th- and 20th-century history of the debate over human antiquity in the Americas: it's not that any of the players have come back from the beyond, but rather that there's been renewed scholarship in this area. One quantitative measure of change: roughly half of the ~1,200 entries in the Bibliography for this edition are publications that appeared in just the last decade.

As before, much of the new material is based on the archaeological and interdisciplinary research and writing that I've done on the peopling of the Americas. I have been especially fortunate in the last decade to collaborate in genomic research with Eske Willerslev and colleagues at the Center for GeoGenetics at the University of Copenhagen and Cambridge University, and we have published many of the key ancient genomes from Siberia and the Americas (Kennewick's included) that bear on the peopling

question. Once again, the content here has passed the gauntlet of peer review, and is repackaged for a broader audience not necessarily expert in these areas, tuned to the jargon, or interested in the gory details that suffuse publications for one's academic colleagues.

Two aspects of the repackaging warrant comment: first, I've not dumbed down the content. The goal is, as it always has been, to make the content accessible, not change it. At times – as with the discussion of genetics and genomics – that's a steep challenge not always well met, and I offer my apologies in advance where I am unsuccessful. Second, where there are contentious issues, and there are more than a few, I do my best to lay out the different and sometimes irreconcilable sides of debate. Yet I do not feel obligated to pretend all viewpoints necessarily have equal merit. I only feel obliged to explain if I disagree with a particular view and why, what the data look like, and provide in (sometimes detailed) endnotes the evidence and citations to the scientific and scholarly literature for those who want to drill further into an issue, or arm themselves to disagree with me. *First Peoples in a New World*, as another reviewer of the first edition (geneticist Noah Rosenberg) put it, is “complete with open-minded but not unopinionated summaries of ongoing debates.” Guilty as charged.

Finally, and in no small measure because of the advent of ancient and modern genomics, there are now far greater opportunities for deep insight into the past, but also many more chances for both greater collaboration and fraught misunderstanding between those who study the past and those whose ancestors lived it. As discussed in Chapter 10, the past matters. So too the manner in which we speak of it. Accordingly, some of the terms I previously thought of as generic and unencumbered (e.g., colonization) are not, and these have been changed. The use of ‘new world’ remains, but only in reference to the first peoples, for whom it was a truly new world. As for how to reference the people of the past, there is still no unanimity: for reasons explained in Chapter 6, I continue to use the term Paleoindian, but not Paleoamerican – save where making specific reference to the literature.